MULTIMEDIA UNIVERSITY ®

STUDENT ID NO

MULTIMEDIA UNIVERSITY

FINAL EXAMINATION

TRIMESTER 1, 2022/2023 (TERM ID 2215)

PCA0150 – COMPUTER APPLICATIONS

(Foundation in Information Technology/Foundation in Law)

22 FEBRUARY 2023
9.00 a.m. – 11.00 a.m.
(2 Hours)

INSTRUCTIONS TO STUDENT

1. This question paper consists of **THREE** pages (excluding the cover page).
2. Answer **ALL** questions.
3. Write your answers in the Answer Booklet provided.

Instructions: Answer **ALL** questions. Write your answers in the Answer Booklet.

QUESTION 1 [10 Marks]

a. The amount of time it takes for a computer to request data and for that request to be fulfilled is known as the access time. An example would be the time between placing an order for pizza and having it delivered.

i. Describe briefly what factor affects a storage device's access time.

(2 marks)

ii. Determine **THREE (3)** different types of storage medium and list them in descending order based on the factor answered in **Question a. (i)**.

(2 marks)

b. Devices that are compact and portable, like cameras and phones, often use memory cards. What **THREE (3)** benefits does a memory card offer?

(3 marks)

c. A virtual reality game has been created by EVOWEB for the Energizer's Shop in the Dark event. The game is one of the key digital tools used to increase sales and qualify players for both the game and the campaign's top prize. Describe **THREE (3)** different multimedia elements that may have been used in the creation of this game.

(3 marks)

QUESTION 2 [10 Marks]

a. An operating system (OS) is the program that controls all other application programs in a computer after being loaded into the system first by a boot program. Explain **THREE (3)** ways of how an operating system might handle these programs.

(3 marks)

b. Bala is creating a spreadsheet for his start-up company. He is editing the text by deleting and adding to it. Describe the stage Bala is at in the development of the project.

(1 mark)

c. Two or more computers connected make up a network. A network's connections to its computers can be made by cables, phone lines, radio waves, satellites, or infrared laser beams. Give **THREE (3)** justifications for why a lot of household and business users set up a network.

(3 marks)

d. TCP (Transfer Control Protocol) and IP (Internet Protocol) are the two most significant protocols for data transmission over the Internet. Explain **THREE (3)** functions of TCP/IP.

(3 marks)

Continued...

QUESTION 3 [10 Marks]

a. Joey is working in a medical lab that needs excellent thermal printers. Describe the thermal printer.

(1 mark)

b. Computer monitors have been used to operate with our desktops and laptops for around 40 years. For many years, the cathode ray tube (CRT) served as the technology's powerhouse for text and video display. Describe **TWO (2)** types of computers displays technologies that replaced CRT technology.

(3 marks)

c. A programming language is any set of rules that transforms strings into different types of machine code output. Explain the differences between procedural language, object-oriented programming language and JavaScript scripting language.

(3 marks)

d. Data is organized in levels. A single or more items from each lower level of data make up each higher level of data. Discuss **TWO (2)** levels of the data.

(3 marks)

QUESTION 4 [10 Marks]

a. A processor is the logic circuitry that reacts to and processes a computer's fundamental instructions. Since it interprets the majority of a computer's orders, the processor is the most important and primary integrated circuits (IC) chip in a computer. However, the heat produced by a processor chip could lead to failure or malfunction of the chip. Describe **TWO (2)** solutions to cool an overheating processor chip.

(3 marks)

b. Data representation describes the way that data is processed, stored, and communicated. Data is stored in digital signal that electronic circuitry can handle on devices like cell phones, iPods, and PCs. Briefly describe the digital signal that a computer uses.

(2 marks)

c. Rows of various coloured pixels form a bitmap graphic and makes the file size of the bitmap graphics larger. Therefore, compression is used to make the file size smaller. Briefly explain lossy compression and lossless compression.

(2 marks)

Continued...

d. According to a report by The Edge Markets published on April 28, 2022, 22% of Malaysian organisations fear they would be the target of cyberattacks within the next year. In its most recent worldwide Cyber Risk Index (CRI) for the second half of 2021, cybersecurity company Trend Micro reported that 87% of Malaysians claimed to have experienced one or more successful cyber-attacks in the previous year. Three cyberthreats in Asia-Pacific were also identified in the CRI report such as Botnets, Ransomware and Denial of Service (DoS). Describe each of these cyber threats.

(3 marks)

QUESTION 5 [10 marks]

a. The concept of operating a computer by waving our hands around was once confined to science fiction films. Today, motion input is being used in the medical field, the military, athletics, and the entertainment industry. Briefly describe how motion input is used in the military and entertainment industry.

(4 marks)

b. A computer screen connected to an interactive whiteboard shows a picture on a touch-sensitive device. What **TWO (2)** benefits do interactive whiteboards have?

(2 marks)

c. Redundant data and isolated data are two major limitations of file processing systems. Businesses adopt a database approach to address these issues. Give **TWO (2)** advantages of the database approach.

(2 marks)

d. A retail company has hired Noah and his team to develop custom inventory software. Various conversion strategies can be adopted by Noah to convert from old software to new software. Briefly describe direct conversion and pilot conversion.

(2 marks)

End of Paper